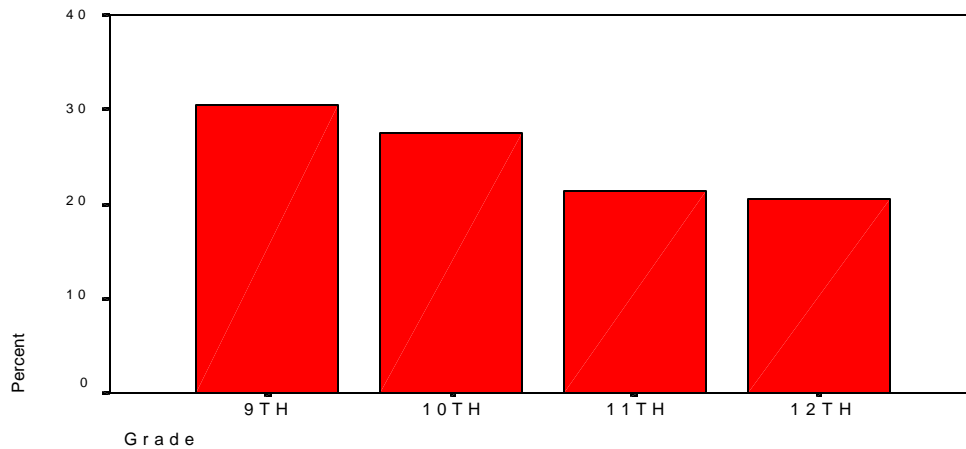


High Schools

In Palau's schools, 1129 students in grades 9-12 were eligible and 1013 participated in the Youth Tobacco Survey, for a response rate of 89.73%. Because all schools participated in the survey and all students were eligible to complete questionnaires, the response rate in Palau compares very favorably with those reported by U.S. states.

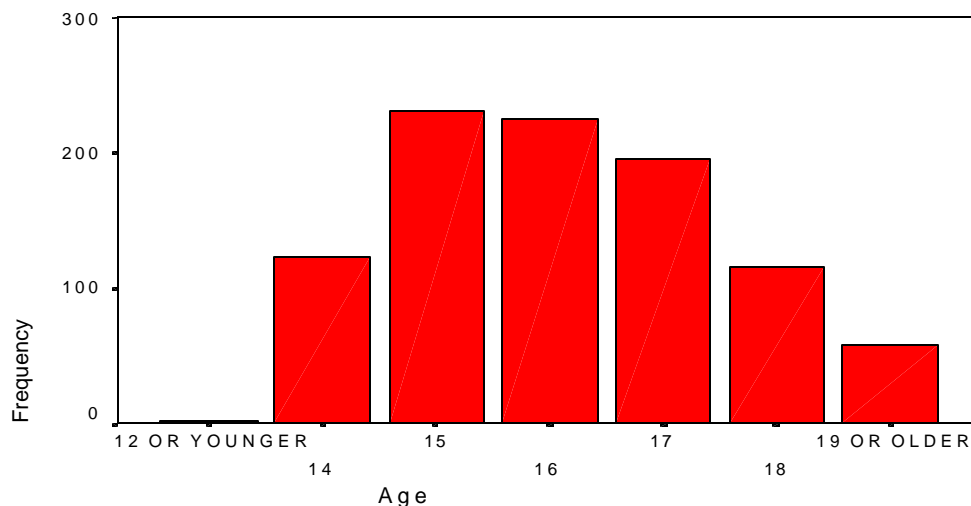
The numbers of students participating in the survey decline as grades increase, reflecting the smaller enrollments in upper grades in Palau's high schools.

Figure 1: Grade Distribution of Respondents



Responses were evenly divided along gender lines: 49.8% of respondents were female and 50.2% were male. The mean age of high school students who completed the survey was 16. Two students were 12 or younger; none were 13 at the time of the survey.

Figure 2: Age Distribution of Respondents



Most of the students who took part in the survey (87%) describe themselves as Palauan. Four percent are from other Pacific Islands, and almost 6% are Asian (including Filipinos). The remaining 3% are Caucasian, Black/African-American, or of “Other” ethnic origin.



I. Surveillance and Evaluation

Tobacco use is a preventable health risk and in many countries it is the leading preventable cause of death. Most tobacco users first experiment with tobacco products in adolescence and many become regular users before age 18. Smoking tobacco is responsible for heart disease, cancers of the lung, larynx, mouth, esophagus and bladder; stroke; and chronic obstructive pulmonary disease. Chewing tobacco alone or in betelnut is associated with leukoplakia, oral cancers, tooth and gum disease, and cardiovascular disease.

To monitor the extent and nature of youth tobacco use, it is necessary to measure prevalence, as well as knowledge and attitudes.

Prevalence of Tobacco Use Among Young People

A. Use of Any Tobacco Product

Lifetime use:

Almost all (**92.0%**) of Palauan high school students have tried using some form of tobacco (in betelnut, smoking, or chewing smokeless tobacco) in their lives. Exposure to tobacco products in various forms is clearly very common.

Current use:

Literature on tobacco and other substance use defines a “current user” as someone who has used a product on one or more of the past 30 days. Seventy-one percent (**71.0%**) of students in grades 9 through 12 are current users of some form of tobacco. There is no significant difference in the proportion of boys and girls who are current users of any form of tobacco, but the proportion of students who report currently using any form of tobacco increases significantly as grade increases ($\chi^2 = 24.793$, **p<0.001**).

Frequent use:

43.3% of all students are frequent tobacco users, defined as having used a tobacco product on 20 or more of the past 30 days. There is no significant difference in the proportion of boys and girls who are frequent users of any form of tobacco. The same trend, an increasing proportion of frequent users as grade increases, is apparent in students who frequently use any form of tobacco ($\chi^2 = 36.879$, **p<0.001**).

B. Betelnut Use

Lifetime use:

The overwhelming majority (**82.0%**) of high school students in Palau have tried chewing betelnut with or without tobacco. There was not a significant difference in the proportions of males and females who had ever tried betelnut. However, students of Palauan origin were significantly more likely to have ever tried betelnut than students of other ethnic backgrounds ($\chi^2 = 46.006$; $p < 0.001$)

Current use:

The survey asked students about how much they chewed in the past 30 days. **68.3%** of high school students are ‘current users’ of betelnut, defined as having chewed betelnut on one or more of the past 30 days.

There is a significant increase in the proportion of current users as grade increases ($\chi^2 = 15.263$, $p = 0.002$). By their senior year, almost 80% of high school students are currently using betelnut.

Table 1: Current Betelnut Users by Grade

Grade	9 th	10 th	11 th	12 th
Proportion Currently Using Betelnut	62.3%	66.3%	68.5%	78.9%

Frequency/amount of betelnut use:

A very large proportion (**40.7%**) are ‘frequent users’, chewing betelnut on 20 or more of the previous 30 days. There was no significant difference in the proportion of males and females who were frequent betelnut users.

Most students who currently use betelnut (**83.9%**) chewed 10 or fewer prepared betelnut chews (*elaus*) per day. However, a substantial fraction (**7.2%**) reported that in the previous 30 days, they had chewed more than 25 *elaus* per day.

Age of initiation:

Of the youth who answered that they had ever tried chewing betelnut, almost 2/3 (**63.0%**) had first chewed betelnut (with or without tobacco) by age 12.

Table 2: Age at First Betelnut Use

Age Category	Percent
5 or younger	13.0
6 to 8 years old	17.1
9 to 10 years old	14.8
11 to 12 years old	18.1
13 to 14 years old	21.0
15 to 16 years old	12.7
17 or older	3.3

C. Betelnut Use with Tobacco:

Lifetime use:

The YTS question about adding tobacco to betelnut (Question 19) does not distinguish between lifetime and current use. The majority (**68.9%**) of high school students answered that they usually added tobacco to their betelnut chew. **67.5%** usually added cigarettes; **1.4%** answered that they usually added smokeless tobacco.

Current use:

About 2/3 of high school students (**67.7%**) are current users of betelnut with tobacco, adding cigarettes or smokeless tobacco to their chew on 1 or more of the previous 30 days. There is some discrepancy in reporting among high school seniors, but it is apparent that almost all students who are chewing betelnut are doing so with tobacco.

Table 3: Current Tobacco Users in Betelnut by Grade

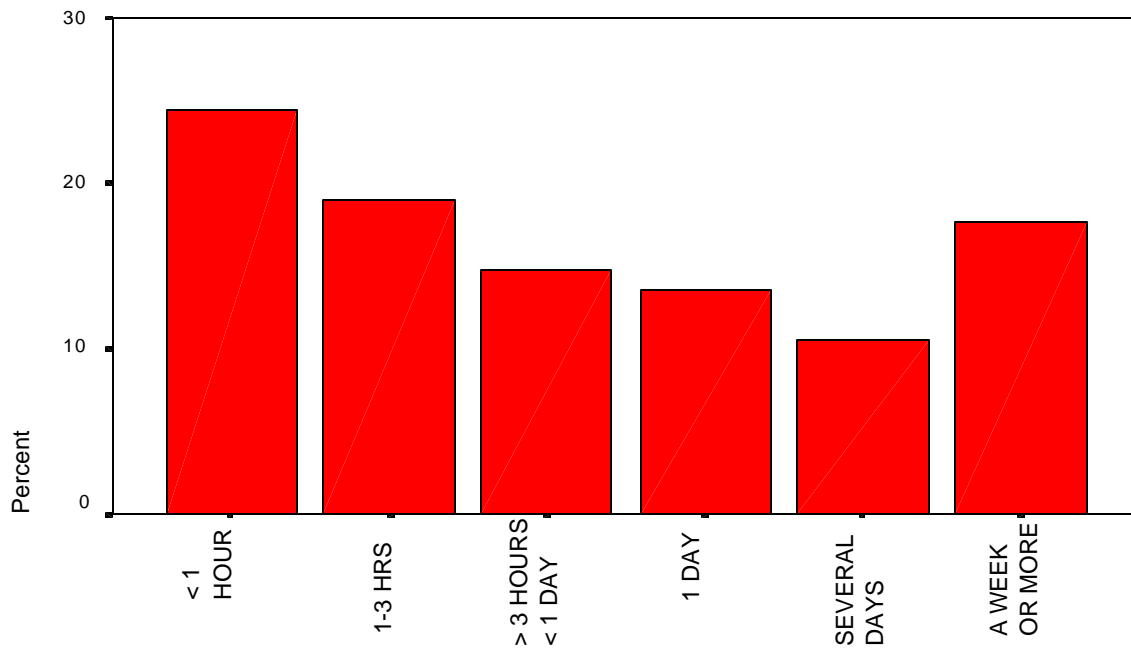
Grade	9th	10th	11th	12th
Proportion Currently Using Betelnut With Tobacco	59.9%	64.0%	67.0%	80.4%

Frequency/amount of use:

41.8% of high school students are frequent users of tobacco with betelnut, adding cigarettes or smokeless tobacco to their betelnut chew on 20 or more of the previous 30 days. About ten percent (**9.9%**) of students were consuming half a pack or more (11 or more cigarette sticks), on the days they chewed betelnut with cigarettes.

Of the students who chewed betelnut with cigarettes or smokeless tobacco, almost half (**43.4%**) reported that they experienced cravings in less than 3 hours.

Figure 3: Time to Experiencing Craving



Age of Initiation:

Most youth who used tobacco in their betelnut started doing so at an early age. More than half (**53.9%**) had started using tobacco in their mengeech before age 12.

Table 4: Age at First Tobacco Use in Betelnut

Age Category	Percent
5 or younger	5.0
6 to 8 years old	13.1
9 to 10 years old	15.1
11 to 12 years old	20.7
13 to 14 years old	26.3
15 to 16 years old	15.5
17 or older	4.3

D. Other Tobacco Use

Lifetime use:

More than 2/3 of high school students have ever tried smoking cigarettes. Reported below are the proportions of students who have ever tried smoking and using various forms of tobacco.

Table 5: Types of Tobacco Products Ever Tried

Type of Tobacco	Proportion Ever Tried
Cigarettes	69.7%
Cigars, cigarillos or little cigars	39.0%
Smokeless/chewing tobacco	23.5%
Smoking pipe tobacco	13.4%
Smoking bidis or kreteks	5.9%

Gender difference in tobacco experimentation:

Males were significantly more likely than females to have ever tried cigars ($\chi^2=20.97$, $p<0.001$); ever smoked tobacco in a pipe ($\chi^2=24.613$, $p<0.001$); ever tried smokeless tobacco ($\chi^2=29.402$, $p<0.001$); and to have ever tried bidis and/or kretek cigarettes ($\chi^2=11.151$, $p=0.001$). There was no difference in the proportion of boys and girls who had ever tried smoking cigarettes.

Current use:

Current smokers are defined as those who have smoked cigarettes on 1 or more of the past 30 days. **23.1%** of high school students are current smokers. Even though this is not the primary form of tobacco use among Palauan high school students, the level of current smoking is comparable to many U.S. states. The 1999 State Youth Tobacco Surveys report rates of current cigarette smoking ranging from **25.2%** to **38.6%**. The national prevalence of current smoking among high school students in the United States was measured at **28.5%** in 1999.

8.3% of Palauan high school students currently use smokeless/chewing tobacco (not in betelnut). This compares to 6.6% in the U.S. See *MMWR* 49: SS-10 (October 13, 2000) for complete details of the 1999 National and State Youth Tobacco Surveys.

Frequency/amount of use:

1.9% of high school students are frequent smokers, smoking cigarettes on 20 or more of the previous 30 days. Most (**62.0%**) smoke 1 cigarette or less on the days they smoke; **4.7%** of current smokers smoke half a pack or more per day.

About one quarter (**24.8%**) of current smokers reported that they could last less than 3 hours before they experienced cravings for a cigarette.

Age of initiation:

Almost half of high school students (**44.3%**) report that they have never smoked a whole cigarette. However, **42.8%** of those who had smoked a whole cigarette reported doing so by the time they were 12 years old.

Table 6: Age at First Whole Cigarette Smoked

Age Category	Percent
8 or younger	13.4
9 to 10 years old	12.8
11 to 12 years old	16.6
13 to 14 years old	25.1
15 to 16 years old	24.9
17 or older	27.3



Tobacco-Related Knowledge and Attitudes

Susceptibility to tobacco use:

Only **4.0%** of students who had never chewed betelnut with tobacco reported that they would DEFINITELY or PROBABLY use betelnut with cigarettes or tobacco in the next 12 months. However, **3.5%** of those who had never chewed betelnut with tobacco said that they would DEFINITELY or PROBABLY take a betelnut chew prepared with tobacco (*elaus* with tobacco) if offered by a close friend.

Surprisingly, Palauan high school students seem to be more susceptible to cigarette smoking. **24.6%** of those who had never smoked said they would DEFINITELY or PROBABLY smoke a cigarette in the next year. A similar proportion, **20.7%**, said they would DEFINITELY or PROBABLY smoke a cigarette if offered one by a close friend.

Males who had never chewed *elaus* with tobacco were no more likely to report that they would take a chew from a friend than females. However, males who had never smoked were significantly more likely than females to answer that they would smoke a cigarette if offered one by a good friend ($\chi^2=16.692$, $p<0.001$).

Image of tobacco users:

When asked if chewing betelnut with tobacco makes young people look cool or fit in, **14.6%** said “definitely yes” or “probably yes”. **9.7%** thought that smoking cigarettes “definitely” or “probably” makes young people look cool. There were no significant differences in attitudes between males and females, or across grades.

Knowledge of health risks:

Most students have had a parent or caregiver tell them about the health risks of tobacco use in any form. **83.4%** of students reported that a parent, grandparent or guardian had discussed the dangers of using tobacco in betelnut, and **84.7%** had been told about the dangers of smoking cigarettes or chewing smokeless tobacco.

Students were asked whether they thought tobacco was addictive, like cocaine or heroin. The vast majority of students were fully aware of the addictive properties of tobacco.

Table 7: Perception of Addiction Risk from Tobacco

Type of Tobacco Use	Definitely/probably addictive	Definitely/probably NOT addictive
Chewing betelnut with cigarettes or smokeless tobacco	92.3%	7.7%
Smoking cigarettes or chewing smokeless tobacco	91.1%	8.9%

However, **42.0%** of students thought that chewing elaus with tobacco was probably or definitely less harmful than smoking cigarettes or chewing smokeless tobacco. Another **33.3%** did not know whether using tobacco in elaus was less harmful.

Students were asked about their perceptions of the risk from using tobacco in small amounts or for a short time.

Table 8: Perception of Risk from Limited Tobacco Use

Type of Tobacco Use	Definitely/probably harmful	Definitely/probably NOT harmful
Chewing betelnut with 1-5 cigarettes/day	89.2%	10.8%
Smoking 1-5 cigarettes/day	88.6%	11.4%
Chewing betelnut with cigarettes or smokeless tobacco for only a year or two	68.0%	32.0
Smoking cigarettes for only a year or two	82.2%	17.8%

Even though students are well aware of the addictiveness of tobacco, they may be overly confident of their ability to use tobacco in limited amounts or for a brief period and then quit.

Approval of tobacco use:

Adolescent perception of the desirability and acceptability of using tobacco is closely tied to what they see their peers and community leaders doing. The Youth Tobacco Survey asked students about their closest friends' tobacco use and who else they have seen using tobacco.

Table 9: Use of Tobacco in Peer Group

How many of your four closest friends..	None	One or more
Chew betelnut with cigarettes or smokeless tobacco?	12.6%	87.4%
Smoke cigarettes, cigars or pipe?	56.2%	43.8%
Chew smokeless tobacco?	70.4%	29.6%

A substantial proportion of students reported that their closest friends smoked or chewed smokeless tobacco. The vast majority of high school students have one or more friends who chew betelnut with some form of tobacco, which tends to make this behavior more acceptable, even desirable. Students were also asked about adults whom they had seen, in the 30 days prior to the survey, chewing betelnut (with or without tobacco) at their place

of work or in their professional roles. Students could answer yes to as many categories as applicable.

Table 10: Use of Betelnut (with or without tobacco) by Adults in Leadership Roles

Adults seen chewing betelnut in past 30 days	Proportion of students who have seen them
Police Officers	62.5%
Sports Coaches	42.9%
Doctors/Nurses/Dentists	43.2%
Teachers/Principals	65.3%
Pastors/Priests/Nuns	14.3%
None of the above	12.3%

It is noteworthy that the adults high school students see almost daily, i.e. their teachers and principals, are frequently seen to be using betelnut either with or without tobacco. Almost 2/3 of students (**65.3%**) said they had seen a teacher or principal chewing betelnut in school in the 30 days before the survey. However, students are much more likely to have seen their teachers than any other adults in the past 30 days.

